Greenwood City/County Planning Staff Report
Application Number: T 26-05-003
Application Type: Text Amendment
Jurisdiction: County
Planning Area: Greenwood County
Council District: All

Request:

Request R 26-05-003 by Planning Department to amend the zoning ordinance for the County of Greenwood to add "Data Center" as a conditional use in I-2 (Heavy Industrial), I-1 (Light Industrial), RDD (Rural Development District) and standards pertaining to their use and location.

Purpose:

There is an unprecedented, rapid increase in data centers throughout the nation and in South Carolina. Over 1500 data centers are in development nationwide with many locating in rural counties. Greenwood County's zoning ordinance is ambiguous on data centers and does not adequately address this unique use, leaving their use classification and location open to interpretation.

The purpose of this text amendment is to address this unique emerging industry by developing regulations on their classification, location, design and to clear up the existing ambiguity. The regulations provided herein are intended to mitigate the impact on local power infrastructure, water resources, environmental resources, noise, light, and visual impacts by establishing specific use standards for data centers.

Proposed County Zoning Text Amendment (This Section will amend Article B Definitions)

Definitions.

Data Center: A facility used primarily for the storage, management, processing, and/or transmission of digital data, and housing computer and/or network equipment, systems, servers, appliances, and other associated components related to digital data operations.

Data Center Accessory Use: Ancillary uses or structures secondary and incidental to a Data Center use, including but not limited to: administrative, logistical, fiber optic, storage, and security buildings or structures; mechanical and electrical equipment such as generators used to provide temporary power when the main source of power is interrupted, and air conditioning units; and facilities such as electrical substations, cooling water, wastewater treatment facilities, water holding facilities, pump stations, water towers, and cooling towers.

Data Center Electrical Substation: A facility used for the transformation or transmission and/or switching of voltages to distribution voltages which switches circuits and distributes usable/consumable electric power, specifically for Data Center users on the same or adjacent site, or on a site immediately across a road right-of-way.

Data Center Principal Building – A building that contains the office and/or data storage functions of a Data Center.

Footcandle: Enough light to saturate a one-foot square with one lumen of light.

This Section will amend Article D. Section 6-3-43 (b), Section 6-3-44 (b), and Section 6-3-47 (b) Permitted Uses

Data Center. Data Centers are permitted as a Conditional Use in the I-2 (Heavy Industrial), I-1 (Light Industrial) and RDD (Rual Development District) subject to the specific requirements in this Section and any other applicable requirements of this Chapter.

Permitting
A Conditional Use Permit is required. Applicants shall provide the necessary building plans, site plans, and supporting documentation necessary to evaluate conformance with these use specific standards prior to beginning land disturbance activities and the issuance of a building permit. Zoning approval is contingent upon the applicant demonstrating conformance to the standards in this section and other applicable requirements of the Zoning Ordinance. Prior to approval of the certification of occupancy, the project shall pass all required inspections.

Building and Facility Placement and Orientation
All principal and accessory structures shall be arranged, designed, and constructed to be harmonious and compatible with the site and with the surrounding properties. Buildings shall be sited and oriented in such a manner to accomplish the following:

1. Minimize visual impacts of the mass and scale of the building when examined on a line-of-sight basis from adjacent roads.
2. Provide safe and convenient vehicular access to the site, including sufficient on-site queuing areas at security gates.
3. Minimize impacts on natural resources.

Parking Requirements
A minimum of 1 parking space per employee on the largest shift is required, plus an additional 2 visitor spaces.

Off Street Loading
A minimum of one loading space is required. Loading spaces/bays shall not be located in the required front yard.

Noise/Vibration
Sound levels at the boundary of adjacent non-industrial use or zoning district shall not exceed 60 dBA. Sound levels at the boundary of any adjacent industrial use or zoning district shall not exceed 70 dBA. Sound that is produced for not more than a cumulative period of one (1) minute in any hour may exceed the standards above by up to ten (10) dBA. The maximum sound levels listed above do not apply to emergency alerts, emergency work to provide electricity, water, or other public utilities when public health or safety is involved. Except for generator testing or commissioning activities, generator use is limited to backup/emergency use only.

> **Sound Study Required.** Any proposal for a Data Center shall include pre- and post-construction sound studies which examine all exterior mechanical equipment and facilities of the building (rooftop and ground-mounted) that produce sound. The sound studies shall identify compliance with this Section as applicable. Sound studies shall be conducted by an Institute of Noise Control Engineering (INCE) Board Certified Engineer.

Pre-construction. The pre-construction sound study shall be submitted with the conditional use permit application. The pre-construction sound study shall recommend the sound reducing materials or systems required to meet the aforesaid sound limits.

Post-construction. The post-construction sound study shall be conducted prior to issuance of the certificate of occupancy. An as-built sound study may also be required thereafter upon request by the Zoning Administrator. If it is determined by the as-built sound study that there is a violation of the aforesaid sound limits, the owner or occupant of the Data Center shall promptly remediate the violation to achieve compliance with the sound limits. A noise reduction barrier or device may be required at the discretion of the Zoning Administrator whether it is inconclusive that noise level tests do not conform to acceptable noise levels.

Soundproofing Required Adjacent to Residential. For Data Centers on property adjacent to a residential use or zoning district, any mechanical equipment located on a roof top, on the ground level, or anywhere on the exterior of the property, shall be screened on all four sides by an acoustical noise reduction barrier. For purposes of this section, acoustical barrier is defined as an exterior solid or louvred wall containing sound-proofing materials designed to absorb noise and protect neighboring properties from noise pollution.

Power, Water and Sanitary Sewer Treatment. Prior to approval of the certificate of occupancy, the applicant shall provide written verification from the applicable service providers stating the following:

1. Adequate capacity is available on the applicable supply lines and substation, and treatment facilities to ensure that the capacity available to serve the other needs of the service area is consistent with the normal projected and planned growth as estimated by the provider.
2. Utility and service supply equipment and related electrical infrastructure are sufficiently sized and can safely accommodate the proposed use.
3. Any system designed for cooling and operation of the facility (electricity, water, or other means) is adequately sized and will not negatively impact on the surrounding service area.
4. The energy storage capacity of the system used (if applicable) will be defined.
5. Efforts will be made to maximize the use of renewable or clean energy.
6. The use will not cause electrical interference or fluctuations in line voltage on and off the premises.

Site Lighting

The intent of these lighting standards is to regulate exterior lights in a manner that provides for minimum illumination necessary for security, while minimizing negative impacts associated with light pollution, glare, and light trespass on neighboring properties.

Photometric Lighting Plan Required. Data centers shall include a photometric plan that shows all exterior lighting. The plan shall provide the maximum illumination including any security lighting.

Lighting Horizontal Surfaces. For the lighting of parking areas, roadways, vehicular and pedestrian passage areas, loading docks, building entrances, sidewalks, and site entrances, luminaires shall be aimed down, and shall meet Illuminating Engineering Society of North America (IESNA) full cut-off/fully shielded criteria.

Lighting Non-Horizontal Surfaces. For the lighting of building facades, landscaping, and signs, luminaires shall be shielded and shall be installed and aimed to not project their output into the windows of adjacent uses, past the object being illuminated, skyward, or onto a roadway.

Light Trespass Adjacent Residential Uses. The illumination projected onto a residential use shall at no time exceed 0.1 footcandle, measured line-of-sight and from any point on the receiving residential property.

Light Trespass Adjacent Non-Residential Uses. The illumination projected from any property onto a nonresidential use shall at no time exceed 0.5 initial footcandle, measured line-of-sight from any point on the receiving property.

Glare. LED light sources shall have a correlated color temperature that does not exceed 3000K.

Maximum Light Fixture Height. Light fixtures shall not be mounted more than 20 feet above the finished grade of the surface being illuminated. No pole-mounted lighting on the roof shall be permitted.

After-hours Site Security Lighting. Site-wide illumination levels shall be lowered by at least 50% after 11 PM or after regular business hours. Motion sensor control may be used as an option to meet this requirement.

Setbacks, Buffer Yards and Screening

The intent of this section is to establish minimum distance between lot lines and buildings/structures; and to establish natural wooded areas or landscaped areas designed to physically and visually separate adjacent incompatible land uses.

Setbacks. All principal buildings, accessory structures, and Data Center Electric Utility Substations shall have a minimum setback of 200 feet from all property lines adjacent to a residential use or zoning district, or school, daycare center, hospital, place of worship, designated park, or public open space. A minimum 100-foot setback shall be provided along any property line adjacent to any other non-industrial use or zoning district.

Building setbacks shall be a minimum of 75 feet from any property line which is adjacent to industrial uses or industrial zoning districts.

Setbacks are measured from the building or the edge of the area containing the substation to the property line. Parking areas and stormwater detention facilities may be located within the required setback area. Ground-mounted equipment is prohibited in any required setback.

Buffer Yards

Required buffer yards shall include either natural wooded areas or landscaped areas intended to physically and visually separate and screen data centers from adjacent properties. Site improvements such as parking lots, and stormwater detention facilities are not permitted in the required buffer yards. The minimum required buffer yards are dependent on the size of the proposed facility as set forth in this section and shall include the required landscaping and plant materials specified in the Buffer Yard Planting and Screening section.

Buffering from Adjacent Properties

1. **Combined square footage of all structures is less than 100,000 square feet:**

A minimum 100-foot buffer yard shall be provided along the entire length of any road frontage and along any property line which abuts a residential use or zoning district, or school, daycare center, hospital, place of worship, designated park, or public open space. A minimum 100-foot buffer yard shall

be provided along any property line adjacent to any other non-industrial use or zoning district. No buffer yard is required along property lines abutting industrial uses or zoning districts.

2. Combined square footage of all structures is between 100,000 square feet and 250,000 square feet:
A minimum 120-foot buffer yard shall be provided along the entire length of any road frontage and along any property line which abuts a residential use or zoning district, or school, daycare center, hospital, place of worship, designated park, or public open space. A minimum 100-foot buffer yard shall be provided along any property line adjacent to any other non-industrial use or zoning district. No buffer yard is required along property lines abutting industrial uses or zoning districts.

3. Combined square footage of all structures exceeds 250,000 square feet:
A minimum 140-foot buffer yard shall be provided along the entire length of any road frontage and along any property line which abuts a residential use or zoning district, or school, daycare center, hospital, place of worship, designated park, or public open space. A minimum 100-foot buffer yard shall be provided along any property line adjacent to any other non-industrial use or zoning district. No buffer yard is required along property lines abutting industrial uses or zoning districts.

Roadside Buffer Yard. A roadside buffer yard shall include a 10-foot-high earthen berm with a grade no than 2:1. with required screening plant materials located on the berm. Buffer yards along roadways shall be measured from the street right-of-way line.

Buffer Yard Planting and Screening. Required buffer yards shall include trees and shrubs intended to provide a dense vegetative screen at the following rates and types:

- 10 Deciduous Canopy Trees every 100 linear feet, and;
- 15 Understory Trees every 100 linear feet, and;
- 30 Shrubs every 100 linear feet, and;
- 30 Evergreen Trees every 100 linear feet.

Minimum Plant Size. The minimum plant size is subject to the requirements in Article E. Section 6-3-67 of this Chapter.

Substitution of Buffer Screening Materials. The use of existing natural topography, trees and vegetation supplemented by new plant material, if needed, for screening is strongly encouraged and may be substituted for the required plantings as provided in Article E. Section 6-3-68 of this Chapter if it determined by the Zoning Administrator that this meets the intent of the buffering requirements.

Refuse Collection and Loading Bay Area Screening. Refuse collection areas shall be fully screened on all sides. Screening may include year-round landscaping or a screen wall/fence of an appropriate height to fully shield from view.

Ground-mounted Mechanical/Electrical Equipment Screening. Ground-mounted equipment shall be completely screened behind an opaque wall or fence. When the equipment is located between buildings, a combination of walls and gates may be used at the openings between buildings. When in or adjacent to an industrial use or zoning district, ground-mounted equipment screening is only required from any existing or planned road.

Location of Ground-mounted Mechanical Equipment. Ground-mounted mechanical equipment shall not be located in any required front yard and shall be separated from adjacent residential uses or zoning districts permitting residential uses, by a principal building.

No Screening Requirements Adjacent to Industrially Zoned Property. As determined by the Zoning Administrator, Data Center Mechanical Equipment located in a manner found to have no adverse impact on adjacent industrial uses or industrial zoning districts is not required to be screened, except that such mechanical equipment shall be screened from any existing or planned road.

Roof-Top Mechanical Equipment. All roof-top-mounted equipment shall be screened by a parapet wall or visually solid screen on all four sides that is constructed of materials complementary to those used in the exterior construction of the principal building. Roof-top equipment that is visible above the parapet wall shall be set back from the exterior or parapet wall a distance no less than the height of said equipment. Roof-top equipment to be screened includes, but is not limited to, the following: cooling, ventilation, and power supply machinery.

Data Center Electric Substations. Electric substations located on the same property as the data center they serve shall not be located in a required front yard and shall be screened by year-round opaque evergreen landscaping or a screen fence, or combination of both, a minimum of 8 feet in height to minimize visual impact. On-site substations do not require a buffer or screening between the principal building and the substation.

Perimeter Fencing. Security Fences shall be of high-quality design and materials. Chain-link fences in any area visible to the public via a public access or from adjacent residential property shall be painted or powder coated black finish to help conceal fencing

Building Façade

All building and mechanical equipment screening wall façades facing adjacent existing or planned roads shall incorporate at least one of the following design elements at a minimum of every 150 linear feet as measured horizontally along the building facade.

- Building material;
- Pattern;
- Texture;
- Color; or
- Accent Materials.

Consistent Design. When a building has more than 1 Principal Façade, the Principal Façades of such building shall be consistent in terms of design, materials, details, and treatment.

Decommissioning Plan

Data Centers are recognized as a distinct use that warrants special consideration due to the rapid advancement and evolution in technology limiting their duration and the potential for residual materials or infrastructure that may require specialized removal or remediation at the end of use. Applicants shall submit a decommissioning plan for removal of obsolete equipment and restoration at the end of the facility's operational life. The plan shall address dismantling and removal of all equipment and appurtenances, including but not limited to special cabling and electrical components, electronic equipment, cooling equipment, power generation, batteries and other associated facilities from the property to a condition where the building and property may be reused for another purpose.

When the operation ceases, the recycling or responsible disposal of decommissioned hardware and materials shall be prioritized to reduce environmental impact. All electronic components shall be recycled by a certified E-waste recycling facility to ensure the proper handling and recycling of electronic components.

Financial Security
Prior to issuance of a certificate of occupancy, the owner shall provide financial security, in the form and amount of a bond, irrevocable letter of credit, or other financial security acceptable to the County, to secure the expense of decommissioning, dismantling, removing, and disposal of the Data Center specific components and equipment, in the amount of 110% of the estimated decommissioning cost minus the salvageable value of the Data Center. The cost estimate shall be provided by a qualified engineer and reviewed and approved by the County Engineer. The County may request adjustments to the original cost estimate or a new cost estimate every five (5) years, which shall be submitted for approval in the same manner as the initial submission. The bond, letter of credit, or other financial security acceptable to the County shall be increased or decreased, as appropriate, upon a finding by the County that the new estimate appropriately addresses the cost of decommissioning. The owner of the Data Center shall pay for all fees associated with the review and approval of each such decommissioning cost estimate by the County Engineer.

Emergency Contact Information
Each Data Center operation shall provide 24-hour emergency contact signage visible at the access entrance. Signs shall include the company name (if applicable), the owner/representative's name, the telephone number, and the corresponding local power company's name and telephone number.

Recommendation:

Staff:	**Approval.**
Planning Commission:	
Council:	